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NATIONAL BUREAU OF STANDARDS
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SOURCES OF RADIO INFORMATION

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1. Periodicals
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3. U.S. Government radio publications
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1. Periodicals

The following is a partial list of periodicals largely devoted to radio. They are monthly, except where otherwise stated. A number of electrical and general magazines also publish considerable radio information.

A classified list of the articles of radio engineering interest appearing in periodicals is published each month in the British magazine listed below, Wireless Engineer. A short abstract of each article is given.

Proceedings of the Institute of Radio Engineers, 330 West 42nd Street, New York, N.Y. (Technical).

Bell System Technical Journal. Published by American Telephone and Telegraph Co., 195 Broadway, New York, N.Y. (Technical) (Quarterly).

QST. Published by American Radio Relay League, West Hartford, Conn. (Technical).

Radio Engineering. Bryant Davis Publishing Co., 19 E. 47th St., New York, N.Y. (Technical).

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Electronics. McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York, N.Y. (Technical).

Communication and Broadcast Engineering. Bryant Davis Publishing Co., 19 E. 47th St., New York, N.Y. (Technical).

Radio News and Short-Wave Radio. 461 Eighth Avenue, New York, N.Y. (Semi-technical).

Radio. 7460 Beverly Blvd., Los Angeles, Calif. (Technical).

Short Wave Craft. Popular Book Corp., 99-101 Hudson St., New York, N.Y. (Semi-technical).

Radiocraft. Continental Publications Inc., 99 Hudson St., New York, N.Y. (Semi-technical).

General Radio Experimenter. Published by General Radio Co., 30 State Street, Cambridge, Mass. (Trade, technical).

Radio Retailing. Published by McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York, N.Y. (Trade).

Radio Today. Caldwell-Clements Inc., 480 Lexington Ave., New York City. (Trade).

Wireless Engineer. Published by Iliffe & Sons, Ltd., Dorset House, Stamford St., London, S.E.1, England. (Technical).

Marconi Review. Marconi's Wireless Telegraph Co., Ltd., Electra House, Victoria Embankment, London, England. (Technical).

Wireless World. Dorset House, Stamford St., London, S.E.1, England. (Semi-technical) (Weekly).

Modern Wireless. Published by Amalgamated Press, Ltd., Fleetway House, Farringdon St., London, E.C.4, England. (Semi-technical).

Elektrische Nachrichten-Technik. Published by Weidmannschen Buchhandlung, Berlin S.W.68, Germany. (Technical; in German).

Hochfrequenztechnik und Elektroakustik (also called Jahrbuch der Drahtlosen Telegraphie und Telephonie). Published by M. Krayn, Genthiner Strasse 39, Berlin W10, Germany. (Technical; in German).

L'Onde Electrique. Published by E. Chiron, 40 rue de Seine, Paris, France. (Technical; in French).

2. Books

Herewith are listed a few of the many books published on the various phases of radio. Under each subject the books are in chronological order. As a matter of convenience, the prices of some of these books are given, but the Bureau can not be responsible for the accuracy of this information.

The sources of Government publications on radio are described in Section 3 below.

Radio Principles

Signaling through space without wires. Sir Oliver Lodge. 1894.
Electrician Publishing Co., London, England.

Electric Waves. H. Hertz. 1900. English translation by D. E. Jones. MacMillan & Co., 60 - 5th Avenue, New York, N.Y.

Principles of wireless telegraphy. G. W. Pierce. 1910. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N.Y.

Wireless telegraphy. J. Zenneck. 1915. English translation by A. E. Seelig. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N.Y.

The principles of electric wave telegraphy. 4th edition. J. A. Fleming. 1919. Longmans, Green & Co., 55 Fifth Ave., New York, N.Y.

Electric oscillations and electric waves. G. W. Pierce. 1920. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y.

Modern theory and practice in radio communication. G. D. Robinson. 1920. United States Naval Institute, Annapolis, Md.

Wireless telegraphy and telephony. W. H. Eccles. 1921.
Wireless Press, Ltd., London, England. Also 326 Broadway,
New York, N.Y.

Principles underlying radio communication. 2nd edition. 1922.
Signal Corps Radio Communication Pamphlet No. 40. Obtainable
from the Superintendent of Documents, Government Printing
Office, Washington, D.C. \$1.00.

Radio telephony for amateurs. S. Ballantine. 1922. David McKay Co., Philadelphia, Pa.

The radio manual. O. E. Dunlap, Jr. 1924. Houghton-Mifflin Co., Cambridge, Mass.

Practical radio. Moyer and Wostrel. 1926. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N.Y.

Fundamentals of radio. J. L. Thomas. 1927. D. Van Nostrand Co., 250 Fourth Ave., New York, N.Y. \$1.50.

Robison's manual of radio telegraphy and telephony. 1927. United States Naval Institute, Annapolis, Md. \$4.00.

Propagation of wireless waves. P. Pedersen. 1927. Vimmelskaftet, Copenhagen, Denmark.

Radio engineering principles. Lauer & Brown. 2d edition. 1927. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N.Y. \$3.50.

Principles of modern radio receiving. L. G. Hector. 1927. Burton Publishing Co., Bigelow Bldg., Buffalo, N.Y.

The outline of radio. J. V. L. Hogan. 1928. Little, Brown & Co., Boston, Mass.

Experimental radio. 3d edition. R. R. Ramsey. 1928. Bloomington, Ind. \$2.75.

Foundations of radio. R. E. Duncan. 1931. John Wiley & Sons, Inc., New York, N.Y. \$2.50.

Wireless principles and practice. L. S. Palmer. 1928. Longmans, Green & Co., New York, N.Y.

The fundamentals of radio. R. R. Ramsey. 1929. Bloomington, Ind. \$3.50.

The radio manual. G. E. Sterling. 1929. D. Van Nostrand Co., 250 Fourth Avenue, New York, N.Y. \$6.00

I.C.S. Handbook for radio operators. 1929. International Correspondence Schools, Scranton, Pa.

Elements of radio communication. J. H. Morecroft. 1929. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$3.00.

Principles of radio. Keith Henney. 1929. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$3.50.

Radiotelegraphy and telephony. Duncan and Drew. 1929. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$7.50.

Experimental radio engineering. J. H. Morecroft. 1931. John Wiley & Sons; Inc., 440 Fourth Ave., New York, N.Y. \$3.50.

The radio handbook. J. A. Moyer and J. F. Wostrel. 1931. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$5.00.

Radio elementary principles. E. E. Burns. 1932. D. Van Nostrand Co., New York, N.Y. \$2.00.

Communication engineering. W. L. Everett. 1932. McGraw-Hill Book Co., Inc., 330 West 42nd St., New York, N.Y. \$5.00.

Radio engineering. F. E. Terman. 1932. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$5.00.

Elementary principles of wireless telegraphy. R. D. Bangay. Revised by O. F. Brown. 1933. Iliffe & Sons, Ltd., Dorset House, Stamford St., London, S.E.1, England. Price 10s.6d.

Radio physics course. A. A. Gherardi. 1933. Radio Technical Publishing Co., 45 Astor Place, New York, N.Y. \$3.50.

Principles of radio communication. J. H. Morecroft. 1934. 3d edition. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$7.50.

Radio engineering handbook. K. Henney. 2d ed. 1935. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$5.00.

The book of practical radio. John Scott-Taggart. 1935. Wireless and Television Review, Cobbs Court, Broadway, London, E.C.4, England.

Practical radio communication. A. R. Nilson and J. L. Horning. 1935. McGraw-Hill Book Co., New York City. \$5.00.

Phenomenon in high-frequency systems. A. Hund. 1935. McGraw-Hill Book Co., 330 W. 42nd St., New York, N.Y. \$6.00.

Principles of radio engineering. R. S. Glasgow. 1936. McGraw-Hill Book Co., 330 W. 42nd St., New York, N.Y. \$4.00.

Foundations of wireless. A.L.M. Sowerby. 1936. Iliffe & Sons Ltd., London. 4s.6d. net.

Wireless telegraphy--Notes for students. 1936. Pitman Publishing Corp., 2 W. 45th St., New York City. \$2.25.

High Frequencies

Les ondes électriques courtes (short electric waves). R. Mesny. 1927. Les Presses Universitaires de France, 40 Boulevard Saint-Michel, Paris, France.

Short waves. C. R. Leutz and R. B. Gable. 1930. C. R. Leutz Inc., Altoona, Pa. \$3.00.

Below 10 meters. 1932. National Co., Malden, Mass. 50¢.

The manual of short wave radio. 2 volumes. 1932. National Co., Malden, Mass. 50¢ each pamphlet.

Hochfrequenztechnik in der Luftfahrt (High-frequency technique in aircraft). H. Fassbender. 1932. J. Springer, Unter den Linden, Berlin NW7, Germany, 68 R M.

How to build and operate short wave receivers. 1933. Published by Short Wave Craft, 96-98 Park Place, New York, N.Y. 50¢.

The radio amateur's handbook. A. F. Collins and G. C. B. Rowe. 7th ed. 1933. Thomas Y. Crowell Co., 393 - 4th Ave., New York, N.Y.

Short wave wireless communication. A. W. Ladner and C. R. Stoner. 1934. 2d ed. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$3.50.

Short wave radio handbook. C. E. Denton. Radio and Technical Publishing Co., 45 Astor Place, New York, N.Y. 1934. \$1.00.

Kruse's radiophone guide. 2d ed. 1934. R. S. Kruse. Published by R. S. Kruse, Guilford, Conn. 50¢.

The radio amateurs handbook. 1936. American Radio Relay League, W. Hartford, Conn. \$1.00.

Radio handbook for amateurs and experimenters. 1936. Pacific Publishing Co., Pacific Bldg., San Francisco, Calif. \$1.00.

Radio Measurements

Prepared radio measurements with self-computing charts. Ralph Batcher. 1921. Wireless Press, Inc., 326 Broadway, New York, N.Y.

Radio-frequency measurements. E. B. Moullin. 2d ed. 1931. J. B. Lippincott, 227 South 6th St., Philadelphia, Pa. \$12.50.

Radio-frequency electrical measurements. H. A. Brown. 1931. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$4.00.

High-frequency measurements. A. Hund. 1933. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$5.00.

1933 Report of the Standards Committee of the Institute of Radio Engineers. Institute of Radio Engineers, 330 W. 42nd St., New York, N.Y.

Inductance authority (inductance charts). E. M. Shiepe. 1933. H. Bernard, 135 Liberty St., New York, N.Y. \$2.00.

Handbook of technical instruction for wireless telegraphists. H. M. Dowsett. 5th ed. 1934. Iliffe & Sons, Ltd., Dorset House, Stamford St., London, S.E.1, England.

Radio receiver measurements. R. M. Bernard. 1934. Iliffe & Sons, Ltd., Dorset House, Stamford St., London, S.E.1, England.

The measurement of inductance, capacity and frequency. A. Campbell and E. C. Childs. 1935. MacMillan & Co., Ltd., London. 30s. net.

Measurements in radio engineering. F. E. Terman. 1935. McGraw-Hill Book Co., 330 W. 42nd St., New York, N.Y. \$4.00.

Engineering handbook of the National Association of Broadcasters. J. C. McNary. 1936. Published by National Association of Broadcasters, National Press Bldg., Washington, D.C. \$10.00.

Vacuum Tubes

The thermionic vacuum tube and its application. H. J. Van der Bijl. 1920. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$5.00.

Thermionic tubes in radio telegraphy and telephony. John Scott-Taggart. 1921. Wireless Press, Ltd., London, England. Also 326 Broadway, New York, N.Y.

Elementary textbook on wireless vacuum tubes. John Scott-Taggart. 1922. Wireless Press, Ltd., London, England. Also 326 Broadway, New York, N.Y.

Theory of thermionic vacuum tube circuits. L. J. Peters. 1927. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y.

Electron tubes and their application. J. H. Morecroft. 1933.
John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y.
\$4.50.

Theory of thermionic vacuum tubes. E. L. Chaffee. 1933. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$6.00.

Electronics. R. G. Hudson. 1933. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$2.00.

Electron tubes in industry. K. Henney. 1934. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$5.00.

Electrons at work. C. R. Underhill. 1934. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$3.00.

The physics of electron tubes. L. R. Koller. 1934. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$3.00.

Thermionic emission. A. L. Reiman. 1934. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$5.50.

Industrial electronics. F. H. Gulliksen & E. H. Vedder. 1935.
John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y.
\$3.50.

Photoelectric Phenomena

Photocells and their applications. Zworykin and Wilson. 1932.
2d ed. John Wiley & Sons, Inc., 440 Fourth Ave., New York,
N.Y. \$2.50.

Photoelectric phenomena. A. L. Hughes and L. A. Du Bridge.
1933. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New
York, N.Y. \$5.00.

Photoelectric cells; their properties, use and applications.
N. R. Campbell and Dorothy Ritchie. Sir I. Pitman & Sons,
Ltd., New York, N.Y. 3d ed. 1934. \$3.75.

Photoelectric cell applications. R. C. Walker and T. M. C.
Lance. 2nd ed. 1935. Pitman Publishing Corp., 2 West 45th
St., New York, N.Y. \$2.50.

Television

Television. H. H. Sheldon and E. N. Grisewood. 1929. D. Van
Nostrand Co., New York, N.Y. \$2.75.

Television -- Its methods and uses. E. H. Felix. 1932. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$2.50.

First principles of television. A. Dinsdale. 1932. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$3.50.

The outlook for television. O. E. Dunlap. 1932. Harper & Bros., 15 E. 26th St., New York, N.Y. \$4.00.

Television - Today and tomorrow. S. A. Moseley and H. J. Barton-Chapple. 1934. Sir Isaac Pitman & Sons, Ltd., London, England.

Television, theory and practice. J. H. Rayner. 1934. Chapman and Hall, London. 12s. 6d.

Television (Collected addresses and papers on the future of the new art and its recent technical developments), vol. I, July 1936, RCA Institute's Technical Press, 75 Varick St., New York City.

Servicing Radio Equipment

Servicing auto-radio receivers. J. F. Rider. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y.

Radio service questions and answers. J. F. Rider. 2 volumes. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y.

Practical radio repairing hints. J. F. Rider. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y.

Practical testing systems. J. F. Rider. 1930. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y. \$1.00.

Radio servicing course. A. A. Gherardi and B. M. Freed. 1930. Radio Technical Pub. Co., 45 Astor Place, New York, N.Y. \$1.50.

Servicing receivers by means of resistance measurements. J. F. Rider. 1932. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y.

Servicing superheterodynes. J. F. Rider. Revised edition 1934. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y.

Specialized auto radio manual. Vol. I. J. F. Rider. 1933. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y. \$3.50.

Practical radio construction and repairing - Radio receiving tubes - Practical radio - All three of these books by Moyer and Wostrel. 1934. Published by McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. Price for three, \$7.50.

Perpetual trouble-shooter's manual. J. F. Rider. 6 volumes. 1935. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y. vol. 1, \$7.50; vol. 2, \$6.50; vol. 3, \$7.50; vol. 4, \$7.50; vol. 5, \$7.50; vol. 6, \$7.50.

Official radio service manual. 1931, \$4.50; 1932, \$5.00; 1933, \$5.00; 1934, \$3.50; 1935, \$7.00. Gernsback Publications Inc., 99 Hudson Street, New York City.

Auto-radio service manual and supplement. 1936. \$2.50. Gernsback Publications Inc., 99 Hudson St., New York City.

Wireless servicing manual. W. T. Cocking. 1936. Iliffe & Sons, Ltd., London, England. 5s. net.

Miscellaneous

How to pass U.S. Government radio license examinations. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$2.00.

Radio traffic manual and operating regulations. Duncan & Drew. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$2.00.

Useful radio tables. J. F. Rider. Radio Treatise Co., Inc., 1440 Broadway, New York, N.Y.

Wireless direction finding and directional reception. 2d ed. R. Keen. 1927. Iliffe & Sons, Ltd., Dorset House, Stamford St., London, England.

Electrical condensers. P. R. Coursey. 1927. Sir I. Pitman & Sons, Ltd., London, England.

Radio data charts. R. T. Beatty. 1930. Iliffe & Sons, Ltd., Dorset House, Stamford St., London, S.E.1, England.

Quartz resonators and oscillators. P. Vigoureux. 1931. Obtainable from British Library of Information, French Buildings, East 45th St., New York, N.Y.

High-frequency alternating currents. K. McIlwain and J. G. Brainard. 1931. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N.Y. \$6.00.

Radio operating questions and answers. 5th ed. 1933. Nilson & Horning. McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York, N.Y. \$2.50.

The cathode-ray oscillograph in radio research. R. A. Watson-Watt, J. F. Herd, L. H. Rainbridge-Bell. 1933. Published by H.M. Stationery Office, London, England. Obtainable from British Library of Information, French Buildings, East 45th St., New York, N.Y.

Applied acoustics. H. Folsom and F. Massa, 1934. P. Blakeston's Stone & Co., Inc., 1012 Walnut St., Philadelphia, Pa. \$4.50.

Broadcast receiver design. G. S. Granger. 1934. Manson Publishing Co., 521 Fifth Ave., New York, N.Y. Pamphlet. 50¢.

All-wave receiver design. G. S. Granger. 1934. Manson Publishing Co., 521 Fifth Ave., New York, N.Y. Pamphlet. 50¢.

High-fidelity receiver design. G. S. Granger. 1934. Manson Publishing Co., 521 Fifth Ave., New York, N.Y. Pamphlet. 50¢.

Electric circuits and wave filters. A. T. Starr. 1935. Pitman Publishing Corp., 2 W. 45th St., New York City. \$6.00.

The cathode-ray tube at work. J. F. Rider. 1935. J. F. Rider, Publisher, 1440 Broadway, New York City. \$2.50.

Making a living in radio. Zeh Bouck. 1935. McGraw-Hill Book Co., 330 W. 42nd St., New York City. \$2.00.

3. U. S. Government Radio Publications

A large number of papers on radio subjects have been issued by the National Bureau of Standards. Some of these have been published by the Government Printing Office and some in various periodicals. Most of them are of interest primarily to the radio engineer or scientist. A list of the current radio publications can be secured by addressing a request to the National Bureau of Standards, Washington, D.C. News of the Bureau's radio work, and announcements of new publications, are given in "Technical News Bulletin", a monthly publication which may be obtained by mail in the U. S. for 50 cents per year from the Superintendent of Documents, Government Printing Office. The notices of new publications state the prices at which each may be purchased from the Superintendent of Documents. The publications of the National Bureau of Standards cover many subjects, including, besides radio, electricity, light, sound, heat, chemistry, metallurgy, engineering materials, standards of weight and measure, and many other scientific and technical subjects.

A pamphlet, "Radio broadcast stations of the United States" (published by the Federal Communications Commission) may be ob-

tained for 10 cents from the Superintendent of Documents, Government Printing Office, Washington, D.C.

A book, "International Radiotelegraph Conference, Madrid, 1932", giving the International Telecommunication Convention and Radio Regulations (published by the State Dept.) may be obtained for 30 cents from the Superintendent of Documents, Government Printing Office, Washington, D.C.

4. Publications of International Bureau of the Telecommunication Union, Berne, Switzerland.

The following radio station lists are available from the International Bureau, at the prices stated.

List of frequencies, and supplements. (26 Swiss gold francs, including postage).

List of coast stations and ship stations. (3.70 Swiss gold francs, including postage).

List of aircraft and aeronautical stations. (2.50 Swiss gold francs, including postage).

List of broadcasting stations, and supplements. (4.00 Swiss gold francs, including postage).

List of stations performing special services, and supplements. (5.50 Swiss gold francs, including postage).

List of call letters of fixed, land, and mobile stations, and supplements. (9.70 Swiss gold francs, including postage).

List of Fixed Stations. (7.70 Swiss gold francs, including postage).

Remittance should be made by international money order to the International Bureau of the Telecommunication Union, Berne, Switzerland.

5. Radio Laws and Regulations

The radio regulations and laws of the U.S. are given in a publication entitled "Revised rules and regulations of the Federal Radio Commission," copies of which are obtainable from the Superintendent of Documents, Government Printing Office, Washington, D.C., for 45 cents. This is a loose-leaf pamphlet; changes in regulations are added from time to time.

The law provides that in order to operate a radio transmitting station, both a station license and an operator license must be secured. The law provides severe penalties for the operation of a transmitting station without proper licenses.

A station used only for receiving does not require a station license. Operators of stations used only for receiving do not require operators' licenses, but must maintain secrecy in regard to messages heard, other than broadcast messages.

Information and the necessary application blanks for station and operators' licenses are obtainable from the Federal Communications Commission, Washington, D.C., or the field office of the Commission in the district in which the applicant resides.

Radio District No. 1.- (Includes: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont). Address: Inspector in Charge, Federal Communications Commission, Customhouse, 7th Floor, Boston, Mass.

Radio District No. 2.- (Includes: The Counties of Albany, Bronx, Columbia, Delaware, Dutchess, Greene, Kings, Nassau, Orange, New York, Putnam, Queens, Rensselaer, Richmond, Rockland, Schenectady, Suffolk, Sullivan, Ulster, and Westchester of the State of New York, and the Counties of Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Passaic, Somerset, Sussex, Union and Warren of the State of New Jersey). Address: Inspector in Charge, Federal Communications Commission, 1024-1026-1030 Federal Bldg., 641 Washington St., New York, N.Y.

Radio District No. 3.- (Includes: Adams, Berks, Bucks, Carbon, Chester, Cumberland, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Perry, Philadelphia, Schuylkill, and York of the State of Pennsylvania, and the Counties of Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Ocean, and Salem of the State of New Jersey; and the County of Newcastle, State of Delaware). Address: Inspector in Charge, Federal Communications Commission, Room 1200, New U.S. Customhouse, 2nd and Chestnut Sts., Philadelphia, Pa.

Radio District No. 4.- (Includes: The State of Maryland, the District of Columbia, and the Counties of Arlington, Clark, Fairfax, Fauquier, Frederick, Loudoun, Page, Prince William, Rappahannock, Shenandoah, and Warren of the State of Virginia, and the Counties of Kent and Sussex, of the State of Delaware). Address: Inspector in Charge, Federal Communications Commission, Fort McHenry, Baltimore, Md.

Radio District No. 5.- (Includes: The State of Virginia, except the Counties of Arlington, Clark, Fairfax, Fauquier, Frederick, Loudoun, Page, Prince William, Rappahannock, Shenandoah, and Warren; and the State of North Carolina except the Counties of Ashe, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Cleveland,

Graham, Haywood, Henderson, Jackson, McDowell, Macon, Madison, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga and Yancy). Address: Inspector in Charge, Federal Communications Commission, Room 402, New Post Office Building, Norfolk, Va.

Radio District No. 6. - (Includes: The States of Alabama, Georgia, South Carolina, Tennessee, and the Counties of Ashe, Avery, Buncombe, Burke, Caldwell, Cherokee, Clay, Cleveland, Graham, Haywood, Henderson, Jackson, McDowell, Macon, Madison, Mitchell, Polk, Rutherford, Swain, Transylvania, Watauga and Yancy of the State of North Carolina. Address: Inspector in Charge, Federal Communications Commission, 411 New Post Office Bldg., Atlanta, Ga.

Radio District No. 7. - (Includes: The State of Florida, Puerto Rico, and Virgin Isles). Address: Inspector in Charge, Federal Communications Commission, Post Office Box 150, Miami, Fla.

Radio District No. 8. - (Includes: The States of Arkansas, Louisiana, Mississippi, and the City of Texarkana only of Texas). Address: Inspector in Charge, Federal Communications Commission, 326 Customhouse, New Orleans, La.

Radio District No. 9. - (Includes: The Counties of Aransas, Brazoria, Brooks, Calhoun, Cameron, Chambers, Fort Bend, Galveston, Goliad, Harris, Hidalgo, Jackson, Jefferson, Jim Wells, Kenedy, Kleberg, Matagorda, Nueces, Refugio, San Patricio, Victoria, Wharton, and Willacy of the State of Texas). Address: Inspector in Charge, Federal Communications Commission, 209 Prudential Building, Galveston, Texas.

Radio District No. 10. - (Includes: The State of Texas, except the Counties of Aransas, Brazoria, Brooks, Calhoun, Cameron, Chambers, Fort Bend, Galveston, Goliad, Harris, Hidalgo, Jackson, Jefferson, Jim Wells, Kenedy, Kleberg, Matagorda, Nueces, Refugio, San Patricio, Victoria, Wharton, and Yancy, and the City of Texarkana, and the States of New Mexico and Oklahoma). Address: Inspector in Charge, Federal Communications Commission, 464 Federal Bldg., Dallas, Tex.

Radio District No. 11. - (Includes: The State of Nevada, Arizona, and the Counties of Imperial, Kern, Kings, Los Angeles, Monterey, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Tulare, and Ventura of the State of California). Address: Inspector in Charge, Federal Communications Commission, 1105 Rives-Strong Bldg., Los Angeles, Calif.

Radio District No. 12. - (Includes: the state of California, except the Counties of Imperial, Kern, Kings, Los Angeles, Monterey, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Tulare, and Ventura; and the State of

Nevada, except the County of Clark, Guam, Midway, and American Samoa). Address: Inspector in Charge, Federal Communications Commission, 328 Customhouse, San Francisco, Calif.

Radio District No. 13.- (Includes: the State of Oregon and the State of Idaho, except the Counties of Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone). Address: Inspector in Charge, Federal Communications Commission, 207 New U.S. Courthouse, Portland, Oregon.

Radio District No. 14.- (Includes: Alaska; the State of Washington, the Counties of Benewah, Bonner, Boundary, Clearwater, Idaho, Kootenai, Latah, Lewis, Nez Perce, and Shoshone of the State of Idaho, and the Counties of Beaverhead, Broadwater, Cascade, Deerlodge, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Ponders, Powell, Ravalli, Sanders, Silver Bow, Teton, and Toole of the State of Montana.) Address: Inspector in Charge, Federal Communications Commission, 808 Federal Office Bldg., Seattle, Wash.

Radio District No. 15.- (Includes: The States of Colorado, Utah, Wyoming, and Montana, except the Counties of Beaverhead, Broadwater, Cascade, Deerlodge, Flathead, Gallatin, Glacier, Granite, Jefferson, Lake, Lewis and Clark, Lincoln, Madison, Meagher, Mineral, Missoula, Ponders, Powell, Ravalli, Sanders, Silver Bow, Teton, and Toole). Address: Inspector in Charge, Federal Communications Commission, 538 Customhouse, Denver, Colo.

Radio District No. 16.- (Includes: The States of North Dakota, South Dakota, Minnesota, and the Counties of Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron Keeweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, and Schoolcraft of the State of Michigan, and the State of Wisconsin, except the Counties of Columbia, Crawford, Dane, Dodge, Grant, Green, Iowa, Jefferson, Kenosha, Lafayette, Milwaukee, Ozaukee, Racine, Richland, Rock, Sauk, Walworth, Washington, and Waukesha). Address: Inspector in Charge, Federal Communications Commission, 927 New Main Post Office Bldg., St. Paul, Minn.

Radio District No. 17.- (Includes: the States of Nebraska, Kansas, Missouri, and Iowa, except the Counties of Allamakee, Buchanan, Cedar, Clayton, Clinton, Delaware, Des Moines, Dubuque, Fayette, Henry, Jackson, Johnson, Jones, Lee, Linn, Louisa, Muscatine, Scott, Washington, and Winneshiek). Address: Inspector in Charge, Federal Communications Commission, 410 Federal Building, Kansas City, Mo.

Radio District No. 18.- (Includes: the States of Indiana, Illinois, and the Counties of Allamakee, Buchanan, Cedar, Clayton, Clinton, Delaware, Des Moines, Dubuque, Fayette, Henry, Jackson, Johnson, Jones, Lee, Linn, Louisa, Muscatine, Scott, Washington, and Winneshiek of the State of Iowa; and the Counties of Columbia, Crawford, Dane, Dodge, Grant, Green, Iowa, Jefferson, Kenosha, Lafayette, Milwaukee, Ozaukee, Racine, Richland, Rock, Sauk, Walworth, Washington and Waukesha of the State of Wisconsin). Address: Inspector in Charge, Federal Communications Commission, 2022 Engineering Bldg., Chicago, Ill.

Radio District No. 19.- (Includes: The State of Michigan, except the Counties of Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft; the States of Ohio, Kentucky, and West Virginia). Address: Inspector in Charge, Federal Communications Commission, 1025 New Federal Bldg., Detroit, Mich.

Radio District No. 20.- (Includes: the State of New York, except the Counties of Albany, Bronx, Columbia, Delaware, Dutchess, Greene, Kings, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Schenectady, Suffolk, Sullivan, Ulster, and Westchester; the State of Pennsylvania, except Adams, Berks, Bucks, Carbon, Chester, Cumberland, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Perry, Philadelphia, Schuylkill, and York). Address: Inspector in Charge, Federal Communications Commission, 514 Federal Bldg., Buffalo, N.Y.

Radio District No. 21.- (Includes Territory of Hawaii). Address: Inspector in Charge, Federal Communications Commission, Aloha Tower, Honolulu, T.H.

The Commission also has the two following field offices: Inspector in Charge, Federal Communications Commission, Central Frequency Monitoring Station, P. O. Box 788, Grand Island, Neb.; Inspector in Charge, Federal Communications Commission, Naval Training Station, Radio Station Bldg., Great Lakes, Ill.

Examinations for radio operators' licenses are held in the district offices listed above and in addition at:

Washington, D.C.	San Antonio, Tex.	Pittsburgh, Pa.
Schenectady, N.Y.	Oklahoma City, Okla.	Cleveland, Ohio
Winston-Salem, N.C.	Des Moines, Iowa.	Cincinnati, Ohio
Nashville, Tenn.	St. Louis, Mo.	Columbus, Ohio.

6. Safety Rules

All ordinary precautions required for the safe operation of any electrical equipment should be observed in every radio station; for example, all high-voltage wiring should be carefully insulated and kept as far as possible from other wiring and so placed as to minimize the possibility that persons may come in contact with it, and suitable danger tags should be displayed.

Insurance companies and city governments make certain requirements regarding electrical installations in buildings. The usual requirements are summarized in a small book, the National Electrical Code, which may be secured for ten cents from the National Board of Fire Underwriters, 85 John Street, New York, N.Y. Article 37 of this Code gives the requirements for radio equipment.

Requirements for safe radio construction are given in National Bureau of Standards Handbook H9, "Safety Rules for Radio Installations," which may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., at ten cents per copy. This handbook gives, on pages 7 to 14, rules for erection of antennas. Some explanation of these rules and of the reasons for them is given in Part 5 of the N.B.S. Handbook H4, "Discussion of the National Electrical Safety Code," the price of which is \$1.00.

Safety standards for radio transmitting equipment are given in the Report of the Standards Committee, obtainable from the Institute of Radio Engineers, 330 West 42nd St., New York, N.Y.

Department of Commerce,
Washington, D.C.

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